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## A Report on a Collection of Ceylonese Serpents

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ABSTRACT.—This is a study of a collection of serpents from Numunukula, Ceylon made by Mr. W. W. A. Phillips. While several presumed new forms are pointed out none are described as new since the author has not been able to examine described types of related forms.

A well-preserved collection of reptiles and amphibians, recently received as a gift from Mr. W. W. A. Phillips, Esq., the well-known mammalogist of Namunukula, Ceylon, contains numerous interesting species.

The specimens were taken by Mr. Phillips on the Tonacombe Estates in the Uva Hills, Uva Province, Ceylon, at elevations between 3000 and 4500 feet. Altogether there are 61 specimens, distributed as follows: 22 snakes, 34 lizards, and 5 amphibians.

In this paper I am reporting on the snakes of the collection. The lizards are being treated elsewhere in a paper dealing with the Ceylonese lizard fauna, and the amphibians in a similar paper dealing with the total amphibian fauna.

I take this opportunity of expressing my gratitude to Mr. Phillips.

### *Pseudotyphlops philippinus* (Cuvier)

*Uropeltis philippinus* Cuvier, Règne animal, distribué d'après son organization, 2nd ed., vol. 2, 1829, p. 76 (type locality, "Philippines"). Wagler, Natürliches System der Amphibien, 1831, p. 194-195; Griffith, The Animal Kingdom arranged in conformity with its organization by the Baron Cuvier, vol. 9, p. 251 (footnote); Müller, Tiedemann und Treviranus Zeitschr. für physiol. Heidelberg, 1832, vol. 4, pp. 248-252, pl. 22, figs. 2, 3; pl. 21, figs. 4, 5; Gervais, Guérin, Magasin Zool. 1837, Cl. 3, pl. 13; Schinz, Naturgesch. Abbildung, Rept., 1833, p. 132; Duméril and Bibron, Erpétologie Générale, vol. 7, pt. 1, 1854, pp. 160-165, pl. 59, fig. 2, head, and 2A, tail (this contains a detailed description of the type specimen). Peters, De Serpenteum Familia Uropeltaceorum, Berlin, 1861, p. 20 (places in synonymy *Uropeltis saffragamus*, *U. pardalis*, and *U. grandis*, three species described by Kelaart, Prodromus Fauna Zeylanicae, vol. 2, pt. 1, 1853 (1854), pp. 15-16.) *Pseudo-typhlops philippinus* Cuvier, Abbildungen neuer . . . Amphibien 1838, p. 44; Gervais, Voyage de la corvette, Favorite, vol. 5, p. 66, pl. 26; Tennent, Sketches of the Natural History of Ceylon . . . London, 1861, pp. 302-303, unnumbered figure.

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- Uropeltis grandis* Kelaart, Prodr. Faunae Zeylanicae, 1854, vol. 2, p. 15; Günther, The Reptiles of British India, 1864, p. 188; Beddome, Ann. Mag. Nat. Hist., ser. 5, vol. 17, 1886, p. 9; Boulenger, The Fauna of British India, Including Ceylon and Burma; Reptilia and Batrachia, 1890, p. 254; Catalogue of the Snakes in the British Museum (Natural History), vol. 1, 1893, p. 139; Green, Spolia Zeylanica 1906, p. 220; Wall, Ophidia Taprobanica, or the Snakes of Ceylon, 1921, p. 26; Journ. Bombay Nat. Hist. Soc., vol. 29, 1923, p. 354.
- Uropeltis saffragamus* Kelaart, Prodr. Faunae Zeylanicae 1853 (1854), p. 15 (type locality Ratnapoora near Adam's peak, Ceylon).
- Uropeltis pardalis* Kelaart, Prodr. Faunae Zeylanicae 1853 (1854), p. 15 (type locality, Matura, Ceylon); Gray, Proc. Zool. Soc. London 1858, pp. 263-264.
- Pseudotyphlops philippinus* Smith, The Fauna of British India, including Ceylon and Burma; Reptilia and Amphibia, vol. 3, Serpentes 1943, pp. 93-94, fig. 27.

The genus *Pseudotyphlops* has been considered by most writers as monotypic. Kelaart, *loc. cit.*, described three forms, that since 1861 have been placed in the synonymy of *philippinus*; or the three have been regarded as a single species under the name *grandis*. In 1861, Tennent (*loc. cit.*) suggested that *Uropeltis grandis* Kelaart (including *pardalis* and *saffragamus*) and *Uropeltis philippinus* Cuvier were synonyms, but this was disregarded for the most part until Smith (1943, *loc. cit.*) placed them under the older name. Smith makes no comments on the Kelaart species save to place them in synonymy.

Of the three forms described by Kelaart, the types of two, *U. pardalis* and *U. grandis* are in the British Museum. The type of *U. saffragamus* is presumably lost.

I regard it as probable that more than a single species (sub-species?) occurs in Ceylon and an examination of the described forms becomes necessary to ascertain which name must apply to which form. Since the descriptions are brief I am repeating them here. The material available to me does not permit a solution of the problem.

#### *Uropeltis saffragamus*

Head dark olive brown, the rest of the upper surface of a blackish brown color with bluish bronze reflections. Beneath white. A pale white spot on each side of the neck near the head. Tail deeply truncated and nearly covered with a large, flat, circular, blackish, granular shield, white and rounded beneath, and with the lower part covered with five series of small scales; the central series broader than the lateral ones, vent shields, 1-2. The neck and forepart of the body thicker. Length 9 inches.

District of Saffragam, near Adam's peak. The only specimen of this species which I have seen, is one sent by Mr. Barnes de Silva from Ratnapoora.

#### *Uropeltis pardalis*

Head small dark olive, upper parts black with beautiful bronze reflections irregularly spotted white. Beneath yellowish white marked with large and small black spots, variously shaped; some spots pale eyed. Tail very short

obliquely truncated, with a large flat orbicular granular shield. Length  $6\frac{1}{2}$  inches. Circumference  $\frac{3}{4}$  inches. Habitat, Matura.

I am indebted to the Rev. Mr. Ondaatje for the only specimen I have examined of this species. The black spots on the lower parts occupy more than one scale, generally two or three contiguous scales, and they are placed without any order in various directions. The chin and throat are immaculate.

*Uropeltis grandis*

Above dark brown with a bluish metallic lustre; anterior part of each scale with a blackish spot. Beneath a pale yellow color, spotted brown on the anterior part of scale. Head of a light olive brown color. Tail short, abruptly truncated, the truncated surface entirely covered with a larger circular granular shield. Vent scales 1-2.

Total length above 1 foot 7 in.; length below 1 ft. 8 in. Tail shield nearly the size of a shilling piece. Head,  $\frac{8}{10}$  inch in length; greatest circumference near neck,  $2\frac{1}{4}$  in. Habitat Southern Province.

The only specimen I have seen of this very large rough tail, is one procured by Mr. Balkhuysen of the Colonial Medical Service, from Kerinday, near Matura, Ceylon.

The description given for *Uropeltis pardalis* seems to approach more closely to the description of the type specimen of *philippinus* (as presented by Duméril and Bibron, *Erpét. Générale* vol. 7, pt. 1, pp. 160-165).

While the dorsal head scales seem to agree in their proportions and relationships there are differences in the labials and the scales on the chin.

Flower, *loc. cit.*, p. 24, fig. 7, gives a figure showing the squamation of the chin; there is no undivided postmental and the first chinshields are regular both touching the mental.

In the specimens at hand three have the first pair of chinshields present, only the one on the left, in contact with the mental. In No. 31248, there is an undivided postmental. The subcaudal scales of males are more numerous and there is some difference in the character of scales about the vent.

No. 31250 has 5 lower labials, No. 31251 has five on one side, four on the other. In Nos. 31248 and 31249 the labials are 4, the second one being normally much larger than in Nos. 31250 and 31251.

The squamation of the head is remarkably similar in the two color forms. The following characters obtain:

Rostral forming a terminal cap on snout, dorsally extending back between nasals and partially dividing them; no internasals; suture of nasals somewhat longer than that between prefrontals; frontal six-sided, its length equal to dorsal length of rostral or length of parietal, not equal to its distance from end of snout; common parietal suture about equal to the prefrontal suture; no anterior

temporal; ocular scale as high as long; the diameter of eye a little less than half length of ocular; nostril in lower anterior corner of nasal; no undivided postmental except in No. 17, a young specimen; ventral length of rostral less than dorsal length; rostral extending 2.7 mm. beyond mouth.

There is rather little variation in the character of the head scales. In No. 31249 the snout region of the head is somewhat broader than in Nos. 31250 and 31251.

Two of these Nos. 31248 and 31249 conform to the color description of *U. philippinus* and *U. pardalis* Kelaart (See Duméril and Bibron *loc. cit.* and fig.) and two Nos. 31250 and 31251 belong to the form described as *U. grandis*.

The description of these follow:

In No. 31249 ♀, the general color is deep, iridescent lavender with a darker area on each dorsal and lateral scale. The three ventral scale-rows together with the median ventral series are distinctly lighter than the dorsum, each scale, save on chin and neck, with an indefinite darker area. A paired series of darker spots (occasionally alternating or fused together) are on the ventral surface. A prominent, yellow, curving spot borders the lower part of the terminal plate border, and the labials, at least the lower part of the labials, are light colored. Length 345 mm.

A young specimen, No. 31248 ♂, measuring only 148 mm. is black above with a bluish iridescence. There is a scattering of very numerous yellow dots, no larger than a single scale, usually single but occasionally on sides suggesting narrow, irregular, transverse lines. The ventrals and three adjoining scale-rows are greenish white with numerous black spots scattered over the venter. There is no tendency to form transverse black bands, and there is no sharp line of demarkation between the dorsal dark ground and the ventral light coloration; chin and throat immaculate; labials whitish.

Nos. 31250 ♀ and 31251 ♀ measure 318 mm. and 360 mm., respectively. They are brownish above with dark markings on all scales above and below, the ventral ground color is lighter than the dorsal but the lighter areas are very indefinite and the spotting such as occurs in the preceding two specimens is absent.

Data on *Pseudotyphlops philippinus*

Number and sex	Elev. in ft.	Ventrals from mental	Subcaudal pairs	Scale rows	Length in mm.
31248 ♂	3000	140	9	22 19 19	148
31249 ♀	2000	149	6	23 19 19	345
31250 ♀	2000	144	4	22 19 19	318
31251 ♀	2000	146 anal 2	4	22 19 19	360

Since the four specimens here listed are from the same general locality, the variation cannot be regarded as geographic. Whether two forms actually are represented cannot be determined from the material at hand.

*Lycodon aulicus* (Linnaeus) (*var.*)

The genus *Lycodon* is known to be represented by at least three species in Ceylon. These are *Lycodon aulicus* (Linnaeus), *Lycodon osmanhilli* Taylor, and *Lycodon striatus* (Shaw)\* The first two species are characterized by having angular ventral scales and nine upper labials; the third species lacks the angular scales and has only eight upper labials.

From the large synonymy of *Lycodon aulicus* presented by Boulenger † and Smith ‡ one suspects that certain of the names probably represent forms worthy of subspecific (or perhaps even specific) designation, more especially since certain of these differences presumed to be individual variation occur throughout a wide range in India and Ceylon. Series of specimens from the same locality are of course necessary to ascertain the degree of differentiation. In the collection at hand there are two specimens of *Lycodon* from southern Ceylon having a different general appearance from those at hand taken in the region north of Trincomalee § in the lowlands. With adequate material it may be possible to recognize a named form for southern Ceylon. Whether this is new, or is an Indian form extending into Ceylon cannot be stated here.

No. 31232, ♂ : The following scale and color characters obtain: the ventrals, 194; anal single, (partly divided anteriorly, undivided posteriorly); subcaudals, 29 + 1; scales smooth, with a single apical pit, the outer row largest; scale formula: 17, 17, 17, 15, 15; supralabials, 9-9, the first not in contact with loreal; infralabials, 10-10, five touching first chinshields, which are scarcely as large as first lower labial; third, fourth, and fifth upper labials enter eye; preocular touches frontal; one preocular and two postoculars; frontal length less than its distance from middle of internasals; prefrontals angular laterally; internasals rounded laterally; diameter of eye, 2 mm.; distance from eye to nostril, 3.65 mm.; eye to level of tip of snout, 5 mm.; above violet-brown banded with cream becoming lighter laterally. A nuchal band separated from the first light body

\* In Univ. Kan. Sci. Bull. vol. 33, pt. 2, 1950, p. 562. The scale data given under *Lycodon striatus* applies to the young paratype of *Lycodon osmanhilli* and not to this species.

† Boulenger, Cat. Snakes Brit. Mus. vol. 1, 1893, p. 325.

‡ Smith, Fauna Brit. India. Rept. and Amph. vol. 3, Serpentes 1943, p. 263-264.

§ Taylor, Univ. Kans. Sci. Bull., vol. 33, pt. 2, 1950, pp. 560-562, pl. 19, fig. 2.



band by a broad darker band covering 36 transverse scale rows; first transverse light band 3 scales wide dorsally to  $5\frac{1}{2}$  scales wide where it borders the ventrals; between the first and second light bands a dark band covering 36 scale-lengths; between second and third light bands (barely indicated laterally) a darker band covering 31 scale-lengths; venter white, the pigment encroaching on the ventrals slightly; scales of white bands each with some pigment.

No. 31233 ♀ : This specimen has the following characters: ventrals, 196; anal divided; subcaudals,  $60 + 1$ ; scale formula: 17, 17, 17, 15, 15 (14); supralabials, 9-9; infralabials, 10-10; head scales as in specimen above; the preocular touches frontal. The color is similar to the above but it is slightly more brownish. The dark band between the neck band and first light body band, is 30 scale-lengths wide; that between the first and second light bands, 23 scale-lengths; that between the second and third light bands, 26 scale-lengths; that between third and fourth light bands, 19 scale-lengths (latter scarcely evident); there is no band of white around the snout on the upper labials, the labials being slightly lighter than scales on top of head.

*Oligodon sublineatus* Duméril, Bibron and Duméril

*Oligodon sublineatus* Duméril, Bibron and Duméril, *Erpétologie Générale*, vol. 7, pp. 57-58 (type locality, Ceylon).

One small specimen (No. 31242), bearing the typical coloration and markings, has 142 ventrals, the anal divided, and the subcaudals  $32 + 1$ . On the left side, the sixth labial is excluded from the labial border. There are seven upper and seven lower labials present. The scales are smooth, a few scattered ones having single apical pits. The scale formula is 17-15-15.

The narrow diagonal lines from the fourth and fifth labials to the prefrontals are narrowly separated mesially. An elongate symmetrical light-edged mark extends from the posterior third of the frontal to a point two scale-lengths behind parietals. A pair of lateral, nuchal spots are present. Anteriorly the dark blotches on each side alternate with their fellows, and there are three rows of ventral dots or dashes, the outer ones being more nearly continuous than the inner.

*Aspidura brachyorrhus* \* (Boie)

*Scytale brachyorrhus* Boie, Isis von Oken, 1827, p. 517, (type locality, Ceylon).

A female specimen, No. 31238, from Tonacombe has the following characters:

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\* This name is incorrectly spelled *brachyorrhos* by Taylor (1950).

Ventrals, 149; subcaudals,  $28 + 1$ , all divided; anal single; scale formula: 17, 17, 17, all rows smooth without keels; supralabials, 6-6; infralabials, 6-6; one preocular, two postoculars, both touching the parietal; temporals,  $1 + 2$ ; frontal hexagonal, distinctly longer than its length from tip of snout; parietals longer than their distance from tip of snout; rostral small, only slightly visible above, the head much narrowed at tip; first chinshields two and one-half times larger than the second chinshields; upper secondary temporals large; median scale following parietals also enlarged; no loreal, the prefrontals touching the second and third labials, the fourth labial alone entering orbital ring; eye small, its diameter into distance between eye and nostril, 2.2 times. Dorsally rather light fawn, the pigment varied so that a lighter stripe, covering much of the fourth and fifth rows, is discernible from the neck band to end of tail; the three outer scale-rows with scattered black pigment, darkest along the edge of the fawn stripe; median dorsal row with a little less pigment than three adjoining rows, and bearing a black spot on each fourth or fifth scale, the series extending to end of tail; a few irregular black spots on sides of neck and anterior fifth of body. Head darker anteriorly, growing light on outer posterior part of parietals and secondary upper temporal; a pair of black, nuchal spots bordered front and back by lighter color behind angles of the jaws; a median, spear-shaped, black mark from parietals extending back six scale-lengths, the three spots nearly contiguous; labials largely cream with black areas; ventrals nearly immaculate, with only an occasional fleck of pigment on their outer edges.

There is a very young specimen (No. 31238<sup>a</sup>) of this species in the collection, that shows no significant differences from the one described.

*Haplocercus ceylonensis* Günther

*Haplocercus ceylonensis* Günther, Catalogue of the Colubrine Snakes in the British Museum, 1858 (Feb. 12, 1859), p. 15 (type locality, Ceylon).

Two specimens are in the collection of which the first No. 31236 has the following characters: one preocular, two postoculars; scale formula, 17, 17, 17, the scales (except on the anterior fourth of body, which is smooth) strongly keeled to tip of tail; supralabials, 6-6; infralabials, 6-7; second pair of chinshields less than one half (near one third) of first pair; three or four lower labials, touching the first chinshields; ventrals, 167, the penultimate divided; anal single; subcaudals,  $47 + 1$ , single. Head brownish followed by a somewhat irregular, darker collar; usually a series of dark dots, separated by three scale-lengths, are discernible on each side of

the body throughout its length; posteriorly they are discernible only with difficulty since the body color is also dark; anterior part of ventral surfaces cream while gradually merging into pink or salmon-pink at the beginning of the second fourth of the body; subcaudal region magenta.

No. 31237. In the second specimen, taken at 4500 ft., 25 May, 1951, there is a distinct lighter band preceding the dark nuchal band; labials and first temporals cream, the sutures edged with dark; two or three light spots on sides of neck. The posterior two thirds of body salmon-pink. The row of dark spots along the sides of the body can be discerned with difficulty.

*Dryophis nasutus* (Lacépède)

*Coluber nasutus* Lacépède, Histoire Naturelle des Serpents, vol. 1, p. 100, vol. 2, p. 277, plate 4, fig. (type locality, Ceylon [restricted]).

One typical specimen No. 31239 from 4000 feet elevation, is present in the collection. The ventrals are 182, the anal divided, and the subcaudals are 154. The color is uniform dark green above, while below it is yellow green with a pair of cream lines on the outer sides of ventrals.

*Natrix stolata stolata* (Linnaeus)

*Coluber stolatus* Linnaeus, Systema Naturae, 1758, 10th ed. p. 219, (type locality, Asia).

A specimen in the collection, No. 31252, has the following characters: scale formula, 19, 19, 17; ventrals, 120; subcaudals, 72; anal divided; supralabials, 8-8; infralabials, 10-10; preocular, 1, not reaching frontal; postoculars, 3; temporals, 1 + 2 + 3; 3rd to 5th labials enter orbit; four lower labials touch first chinshields, which are (presumably abnormally) transversely divided; eye large, its diameter equal to its distance from nostril; frontal longer than its distance from tip of snout; shorter than the parietals.

Head scales largely edged with black; two yellow bars, one in front, one behind eye on side of head, each bordered by black bars; venter and under side of tail, chin and throat immaculate.

*Boiga ceylonensis* (Günther)

*Dipsadomorphus ceylonensis* Günther, Catalogue of the Colubrine Snakes in the collection of the British Museum, Feb. 12, 1858 (1859), p. 176 (type locality, Ceylon); Reptiles of British India, 1864, p. 314, pl. 23, fig. B.

Two female specimens, No. 31240 and No. 31241 are in the collection. These specimens have the following characters: Internasals as long as broad or a little longer; prefrontals nearly a half



broad than long, and longer than internasals; frontal one-fifth or one-sixth longer than broad, its length greater than its distance from the tip of the snout; loreal quadrangular, a little higher than long; preocular single, high, narrowly separated from frontal (or touching); two postoculars; temporals (respectively)  $2 + 4 + 4$ ;  $2 + 3 + 4$ ; upper labials, 8-8, 8-8; lower labials, 11-12, 11-11, five or six lower labials touching first chinshields; scale formula, 19, 19, 19, 15; 19, 19, 18, 13 (in this latter specimen, the median dorsal scales becoming very large where the rows reduce to 13); ventrals, 224, 222; anal, 1, 1; subcaudals  $107 + 1$ ,  $98 + 1$ .

There are some indefinite flecks or spots on the interorbital area and on snout; a pair of symmetrical spots with somewhat lighter, brownish centers on parietals; a black line, beginning behind eye, extends back, narrowing on the eighth labial, then widening a little and terminating behind jaw angle; a median series of dark blotches, 58(59) from occiput to vent; some twenty indefinite spots discernible on tail; on sides an equal number of rather indefinite dark marks alternating with the median series and below these is another series alternating with the preceding and opposite the median series that extends onto edges of ventrals. Venter dirty white with an indefinite row of small spots or flecks on each side, and with finer flecks or peppering over the ventrals, least dense on neck region, most dense under tail. One of the specimens No. 31241 had the remnants of a green *Calotes* in its stomach but I could not identify the species with certainty.

*Boiga trigonata* (Schneider)

*Coluber trigonatus* Schneider in Bechstein (Lacépède, Histoire Naturelle des Serpents, vol. 4, 1802, p. 256, pl. 40, fig. 1 (type locality, Vizagapatam, India (Based on Russel).

This specimen, (No. 31234), has the following characteristics: Scale formula: 23, 21, 21, 17, 17; ventrals, 237; anal, 1; subcaudals,  $85 + 1$ ; preoculars, 2; postoculars, 2; labials, 8-8; lower labials, 11-11; temporals,  $3 + 3 + 4$ ; scales of median row nearly a half larger than adjoining scales; upper head triangular with a pair of grayish lines beginning on supraoculars and extending from supraocular back to angle of mouth; bordering these on their inner edge, is a pair of grayish brown, darker-edged stripes that run forward and join the gray-brownish color of the snout and area in front of eyes; these stripes are separated by a narrow gray stripe running from the posterior level of eyes to the ends of the parietals where the line forks and runs back behind the mouth angles inclosing a

somewhat arrow-shaped, brownish, darker-edged spot on the nape. Body generally gray-brown with approximately 59 narrow, transverse, light gray bands edged with black. The black becomes more important and may cover nearly a whole scale row as does the lighter color; spots resulting come to alternate and the bands may join a median light line that extends the greater part of length of body; on the lower body scales and outer edges of ventrals there are numerous small blackish dots rarely appearing near the mid-ventral part of venter.

*Bungarus ceylonicus* Günther

*Bungarus ceylonicus* Günther, Reptiles of British India, 1864, p. 344 (type locality, Ceylon).

A specimen (No. 31230) has the head somewhat mutilated and certain scale characters are obscured. The ventrals are 132, the anal single, the subcaudals  $33 + 1$ . The color is black above with 18 whitish bands on the body and four on the tail. These bands are narrowed dorsally to a width of 2 to  $2\frac{1}{2}$  scales, but widen on the sides and on the venter to a width of four, more rarely five, ventral scales. Ventrally the intervening black areas are usually six scales wide, the ventrals involved in most cases still having some white color remaining. The black ventral markings are not present in the young, but they become increasingly important in older specimens. The first white band is separated from the head by approximately 20 black scale-rows. The first two white bands involve  $10\frac{1}{2}$  and  $8\frac{1}{2}$  ventrals respectively.

*Agkistrodon hypnale* (Merrem)

*Cophias hypnale* Merrem, Syst. Amph., 1820, p. 155 (type locality, Ceylon).

The five specimens in the collection, Nos. 31343-31347, are from Tonacombe. The ventral and subcaudal scale-counts of these are, respectively:

31343 ♂	155 ventrals	43 subcaudals
31344 ♀	153	35
31345 ♀	151	35
31346 ♀	149	35
31347 ♀	148	36